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New Frontiers in Multifunctional Material Science and Processing

Serbian Ceramic Society
Institute for Testing of Materials
Institute of Chemistry Technology and Metallurgy
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Influence of Synthesis Parameters on Structure of 1-D TiO_2 nanostructures

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The influence of electrochemical conditions and the heat treatment on the crystal structure and the microstructure evolution of TiO_2 based nanotubes synthesized by the self-ordering anodization process is investigated in this work. The electrochemical anodization was performed at room temperature, for 30 minutes under 15, 20 and 25 V, with stirring. The as-anodized Ti foils were annealed in air at 450, 600, 650 and 700 °C for 30 minutes. The structure and the lattice dynamics of the samples has been studied by using XRD and Raman spectroscopy methods. The microstructure development of the 1-D TiO_2 nanostructures has been analyzed by FESEM.